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# Department of Industrial Relations

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VOL. I

COLUMBUS, OHIO, MAY 10, 1922

No. 2

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DIVISION OF LABOR STATISTICS  
REPORT NO. 2

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Statistics of  
Mines and Quarries in Ohio

1921



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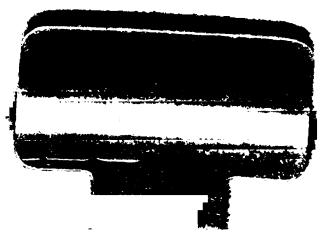
DEPARTMENT OF INDUSTRIAL RELATIONS

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STATISTICS  
OF  
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IN OHIO

1921



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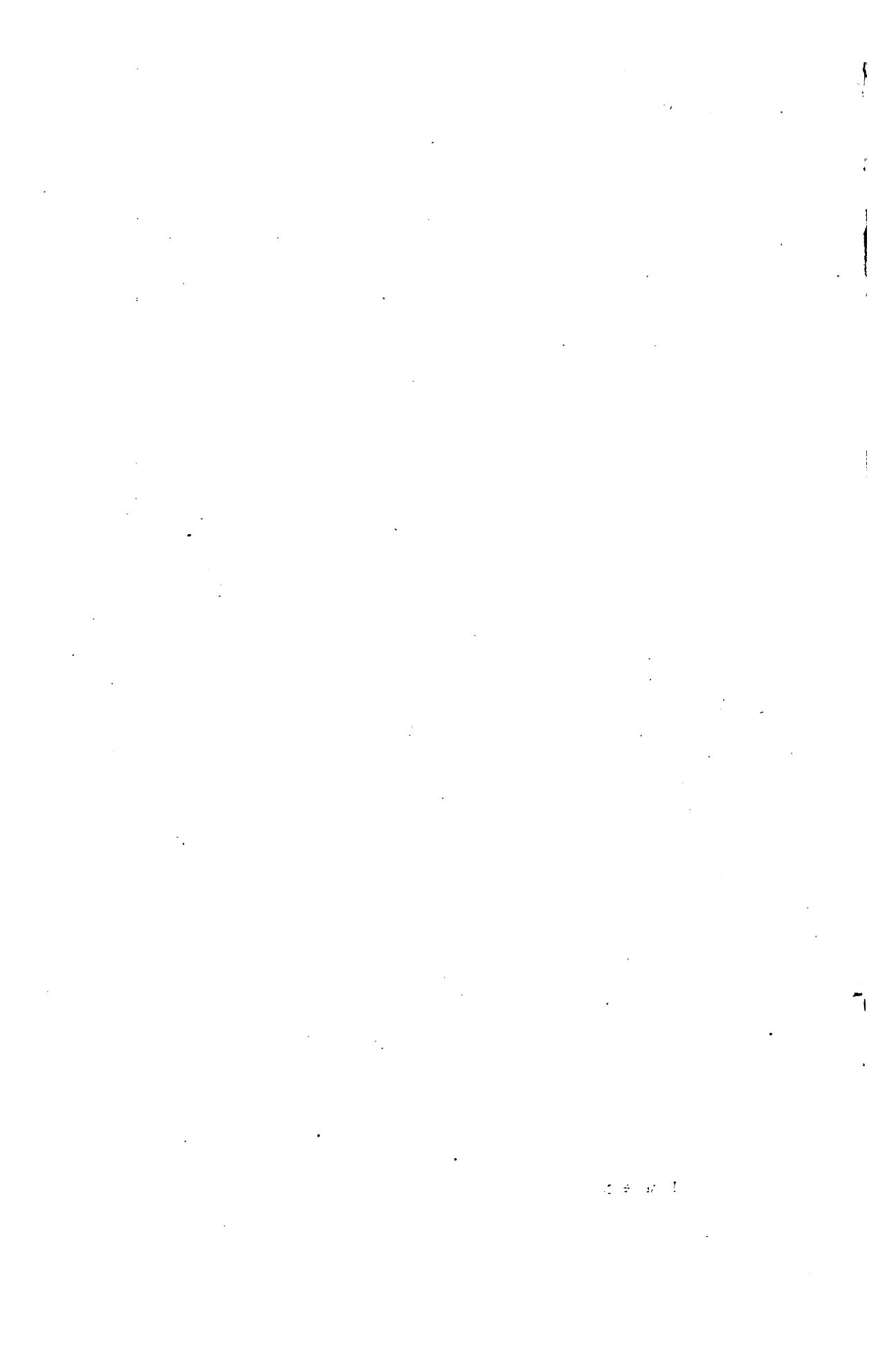
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## PREFACE

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The Division of Labor Statistics presents in this report data on production, number of employes, wage payments, and hours of labor in the mines and quarries of Ohio for the year ending December 31, 1921. Coal, fire clay and gypsum mines and limestone and sandstone quarries are each discussed in separate sections.

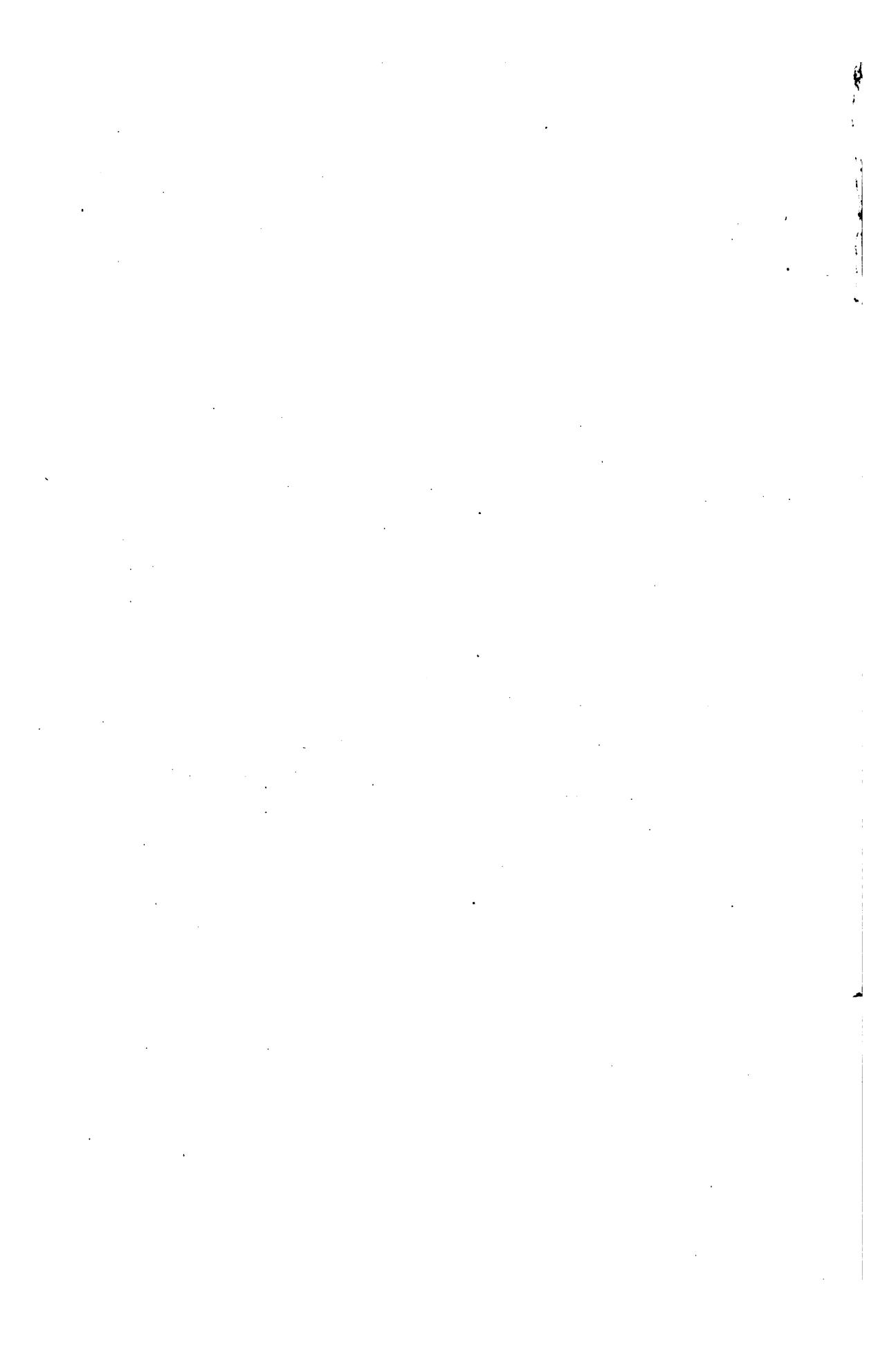
All facts herein set forth were secured from schedules furnished by the owners or operators of these mines and quarries.

This report was prepared by Miss Florence E. Kinnison, Statistician.

W. J. BIEBESHEIMER,

*Chief of Division.*

Columbus, Ohio, May 10, 1922.



## COAL MINES.

### PRODUCTION

Coal production reported to the Department of Industrial Relations, Division of Labor Statistics, by operators and owners of 1,104 mines for the year ending December 31, 1921, totals 32,242,857 tons (a). This is 7.9 per cent of the total bituminous production of the United States, estimated as 407,000,000 tons by the United States Geological Survey on March 11, 1922, and ranks Ohio as the fourth state in quantity of such coal mined.

Production was the smallest of any years since 1915 and compared with 1920, was short 12,984,220 tons, or a decrease of 28.6 per cent.

Belmont County shows the greatest production, mining about 36 per cent of the coal produced in the State; Jefferson County ranking second with about 14 per cent; Guernsey County ranking fourth with 9 per cent and these four counties produced 72 per cent of the coal mined in the State.

*Table 1* shows the production by counties for the years 1916 to 1921 inclusive. It will be noted that only seven counties produced more than 1,000,000 tons during the year 1921 as compared with nine counties during the year 1920.

### METHOD OF PRODUCTION.

*Table 2* giving the method of production, shows that machine mining produced 90.3 per cent of the coal in the State, pick mining 5.2 per cent and by the stripping method, 4.5 per cent.

Schedules furnished this Department show that the stripping method is used in eleven counties in combination with the other methods, while seven counties report pick mining exclusively.

*Table 3* gives the total production from 1889 to 1921 inclusive, classified as to the method of production.

*Table 4* shows the production for the counties by months for the year 1921.

### DISPOSITION OF PRODUCT.

*Table 5* complies with the rules of the Department of Industrial Relations requiring information from coal operators as to the disposition of their product and these are shown under the four important classifications.

(a) The short ton of 2,000 pounds is used throughout this report, and all figures are for total production, without regard to grade of coal mined.

## MINING MACHINES.

*Table 6* gives data as to the number of mining machines in use in the State, with their production classified as to counties. The reports show that there are but seven mining machines in operation in the State using compressed air as a motive power, all others being operated by electricity. And it is interesting to note that over 90 per cent of the coal was produced by mining machines during the year 1921.

*Table 7* gives a comparison of the years 1920-1921 as to the number of machines in operation, their production per year and per day by counties.

*Table 8* shows the number of machines in the State and their production per year and per day from 1904 to 1921 inclusive.

## HAULAGE METHODS.

*Table 9* gives detailed information as to the several methods of haulage in coal mines and it will be noted that animal haulage is an important factor in the production of coal.

## CHARACTER OF OPENINGS.

*Table 10* shows the number of drift, slope and shaft mines in the State and it will be noted that drift mines predominate.

## METHODS OF VENTILATION.

*Table 11* indicates the methods of ventilation used in the mines of the State, showing that over one-half use fans for this purpose.

## NUMBER OF EMPLOYES.

*Table 12* gives the average number of employes in pick, machine and stripping mines arranged by counties comparing the years 1920-1921, and it will be noted that while the pick and stripping mines reduced their forces practically 50 per cent there was an increase in the number of machine mine employes, as the total for 1921 was 54,089, which was but slightly less for the year 1920.

*Table 13* shows the average number of employes in pick, machine and stripping mines from 1904 to 1921 inclusive and it will be noted that during this period the percentage of employes in machine mines rose from 61 to 90 per cent, while the employes in pick mines dropped from 38 to 6 per cent.

*Table 14* gives a comparison of the years 1920-1921 as to the average number of employes in pick mines classified as to occupations, by counties.

*Table 15* shows similar information as to machine mines.

## FLUCTUATION OF EMPLOYMENT.

*Table 16* indicates the average number of days worked in the three classes of coal mines in the State, giving this information by counties as well as a comparison of the years 1920-1921, and shows an average decrease of 47 per cent in the average number of days worked.

*Table 17* shows the average number of days worked in mines from 1904 to 1921 inclusive.

*Table 18* shows the fluctuation in the number of employes on the payroll nearest the fifteenth of each month during the year.

## PRODUCTION PER EMPLOYEE.

*Table 19* shows the amount of coal produced per year and per day, per employe, in their various occupations, giving a comparison of the years 1920-1921 by counties. While the average per day for 1921 compares very favorably with 1920, the yearly average is much smaller due to the less number of days worked.

*Table 20* gives this information for the State for the years 1895 to 1921 inclusive.

## WAGE AND SALARY PAYMENTS.

*Table 21* shows the total wage and salary payments to each class of employes, by counties, the total being \$59,056,523.

*Table 22* gives the classified weekly wages by counties grouped in certain wage range, showing the number in each group. The reports would indicate that about one-half of all employes of coal mines receive between \$35 and \$50 per week.

....*Table 23* gives similar information except grouped as to occupations.

*Table 24* shows total wages and salaries paid each year from 1916 to 1921 inclusive.

## UNEMPLOYMENT.

*Table 25* shows the average number of days lost by each mine by counties, giving the principal causes for the shutdown, and it will be noted that an average of 130.8 days were lost by each mine because of "No Market."

## LOCATION.

*Table 26* gives the number of coal mines located on each railroad, by counties, showing the principal coal carrying roads in Ohio are the B. & O., H. V., and Penna. Of the 1,104 mines reporting, 36 are stripping operations and 383 wagon mines.

TABLE 1.  
Coal Production by Counties for the Year Ending December 31, from 1916 to 1921 Inclusive With Comparative Data for the Years  
1920-1921.

County.	Tons Produced.					Gain.			Loss.		
	1916	1917	1918	1919	1920	1921	Tons.	Per Cent.	Tons.	Per Cent.	
Athens .....	3,743,672	6,313,619	6,742,867	5,181,643	6,872,646	4,154,994	6,2	2,717,652	39.5		
Belmont .....	10,553,968	11,156,626	12,030,431	9,999,648	10,953,668	11,634,028	680,360	100,680	25.9		
Carroll .....	326,714	487,092	518,996	361,823	388,518	287,833	.....	390,931	40.8		
Columbiana .....	518,862	616,925	738,473	650,971	957,811	566,880	.....	234,112	51.0		
Coshcotton .....	316,045	371,785	488,919	274,998	458,841	224,729	.....	12,840	57.8		
Gallia .....	6,983	28,270	27,122	12,514	22,207	9,367	.....	77,429	20.6		
Gurnsey .....	4,397,262	4,024,265	4,497,303	3,342,915	3,760,463	2,983,084	.....	38,491	2.0		
Harrison .....	990,641	1,223,561	1,772,670	1,452,061	1,917,607	1,879,116	.....	1,287,755	69.4		
Hocking .....	1,435,188	2,211,858	2,382,304	1,162,366	1,855,499	567,704	.....	161	1.7		
Holmes .....	14,826	20,144	13,431	11,512	9,645	9,484	.....	653,128	77.7		
Jackson .....	727,999	1,016,249	1,018,063	478,474	841,314	187,886	.....	2,272,174	33.8		
Jefferson .....	5,366,793	5,742,240	7,289,909	4,964,610	6,713,531	4,441,357	.....	227,688	79.5		
Lawrence .....	166,261	241,333	322,917	140,333	286,399	58,731	.....				
Licking .....	.....	.....	655	.....	.....	.....	.....				
Mahoning .....	28,842	50,537	64,832	40,160	55,985	40,550	.....	15,435	27.6		
Medina .....	9,205	10,088	7,353	5,249	6,652	2,404	.....	4,248	63.9		
Meigs .....	1,025,036	1,267,144	1,373,479	877,516	1,539,162	941,773	.....	597,389	38.8		
Monroe .....	888	682	841	312	516	439	.....	77	14.9		
Morgan .....	258,721	326,008	380,046	208,671	276,852	198,788	.....	78,064	28.2		
Muskingum .....	396,289	541,261	671,666	399,364	669,960	193,920	.....	476,040	71.1		
Noble .....	864,695	918,519	984,989	809,317	638,237	540,694	.....	97,543	15.5		
Perry .....	1,195,127	2,445,114	3,514,841	2,580,890	3,700,511	1,600,510	.....	2,100,001	56.7		
Pike .....	.....	92,439	88,523	75,310	15	.....	.....	15	100.0		
Portage .....	69,432	2,608	1,086	860	121,943	67,615	.....	54,398	44.6		
Scioto .....	617	471,084	535,423	325,923	498,118	739	.....	96	10.8		
Stark .....	335,480	29,680	55,676	37,397	17,744	12,652	.....	187,988	37.7		
Summit .....	38,260	.....	.....	.....	.....	.....	5,112	28.8			

Trumbull	1,116	1,266	1,750	1,347	2,614	813	.....	.....	.....	.....	1,801	68.9
Tuscarawas	1,547,110	1,788,800	2,120,837	1,595,620	2,231,345	1,207,139	.....	.....	.....	.....	1,024,206	45.9
Vinton	106,376	212,940	377,892	166,881	340,866	95,118	.....	.....	.....	.....	245,748	72.1
Washington	421	1,137	2,498	4,543	16,687	5,719	.....	.....	.....	.....	10,968	65.7
Wayne	84,996	65,762	35,410	62,580	70,837	18,887	.....	.....	.....	.....	52,150	13.6
State	34,526,552	41,677,986	47,919,202	35,225,908	45,227,077	32,242,857	.....	.....	.....	.....	12,984,220	28.7
Net Loss Per Cent	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 2.

Coal Production for the Year Ending December 31, 1921, Classified According to Method of Production — By Counties.

County.	Tons.				Per Cent.		
	Pick Mined.	Machine Mined.	Stripped.	Total.	Pick Mined.	Machine Mined.	Stripped.
Athens .....	77,230	4,077,764	.....	4,154,994	1.9	98.1	.....
Belmont .....	219,873	11,397,757	16,398	11,634,028	2.0	97.9	0.1
Carroll .....	41,566	242,767	8,500	287,833	14.4	84.8	1.8
Columbiana .....	89,505	433,537	43,888	566,880	15.8	76.5	7.7
Coshocton .....	83,300	141,429	.....	224,729	37.1	62.9	.....
Gallia .....	9,367	.....	9,367	100.0	.....	.....	.....
Guernsey .....	22,224	2,900,560	60,250	2,983,034	0.8	97.2	2.0
Harrison .....	17,582	1,420,444	441,090	1,879,116	0.9	75.6	23.5
Hocking .....	49,480	518,224	.....	567,704	8.7	91.3	.....
Holmes .....	9,484	.....	9,484	100.0	.....	.....	.....
Jackson .....	89,914	97,972	.....	187,886	47.9	52.1	.....
Jefferson .....	81,804	3,913,333	446,220	4,441,357	1.8	88.1	10.1
Lawrence .....	54,913	3,818	.....	58,731	98.5	6.5	.....
Mahoning .....	26,522	18,624	404	40,550	65.4	33.6	1.0
Medina .....	2,404	.....	.....	2,404	100.0	.....	.....
Meigs .....	17,323	924,450	.....	941,773	1.8	98.2	.....
Monroe .....	439	.....	439	100.0	.....	.....	.....
Morgan .....	.....	198,788	.....	198,788	.....	100.0	.....
Muskingum .....	51,374	123,097	19,449	193,920	26.5	63.5	10.0
Noble .....	4,287	536,407	.....	540,694	0.8	99.2	.....
Perry .....	255,752	968,571	376,187	1,600,510	16.0	60.5	23.5
Portage .....	9,145	58,470	.....	67,615	13.5	86.5	.....
Scioto .....	793	.....	793	100.0	.....	.....	.....
Stark .....	167,961	141,514	665	310,120	54.2	45.6	0.2
Summit .....	12,632	.....	.....	12,632	100.0	.....	.....
Trumbull .....	818	.....	818	100.0	.....	.....	.....
Tuscarawas .....	272,092	882,946	52,101	1,207,139	22.5	78.2	4.8
Vinton .....	7,731	87,387	.....	95,118	8.1	91.9	.....
Washington .....	1,431	4,288	.....	5,719	25.0	75.0	.....
Wayne .....	4,187	14,500	.....	18,687	22.4	77.6	.....
State .....	1,681,118	29,101,647	1,460,092	32,242,857	5.2	90.3	4.5

TABLE 3

Annual Coal Production Classified According to Mining Methods, 1889 to 1921 Inclusive.

(The Bureau of Mines received no reports on mining methods prior to 1889. Practically the entire product reported to it annually from 1872 to 1888 was pick mined)

Year.	Tons.				Per Cent of Total Production		
	Pick Mined.	Machine Mined.	Stripped.	Total.	Pick Mined.	Machine Mined.	Stripped.
1889	10,007,886	90,000	...	10,907,885	91.7	8.3	...
1890	10,640,360	1,148,499	...	11,788,859	90.8	9.7	...
1891	11,396,106	1,654,081	...	13,050,187	87.8	12.7	...
1892	12,380,828	2,239,080	...	14,619,908	84.7	15.8	...
1893	12,275,023	2,553,074	...	14,828,097	82.8	17.2	...
1894	9,354,753	2,555,466	...	11,910,219	78.5	21.5	...
1895	10,563,423	3,120,456	...	13,683,579	77.2	22.8	...
1896	9,544,259	3,368,349	...	12,912,608	73.9	26.1	...
1897	8,312,098	4,166,124	...	12,448,222	67.0	33.0	...
1898	8,805,557	5,252,598	...	14,058,155	62.6	37.4	...
1899	9,167,874	6,741,060	...	15,908,934	57.6	42.4	...
1900	9,966,372	9,457,777	...	19,426,649	51.3	48.7	...
1901	9,831,476	10,489,814	...	20,321,290	48.4	61.6	...
1902	10,489,619	13,489,648	...	23,929,267	43.8	56.2	...
1903	10,012,335	14,560,931	...	24,573,266	40.7	59.3	...
1904	8,037,360	18,546,455	...	24,583,815	32.7	67.8	...
1905	6,825,125	19,009,532	...	25,834,657	26.4	73.6	...
1906	6,500,263	20,713,232	...	27,213,195	23.9	76.1	...
1907	6,511,773	25,894,176	...	32,265,949	20.1	79.9	...
1908	4,676,869	21,610,931	...	26,287,800	17.8	82.2	...
1909	4,608,402	23,146,630	...	27,755,032	16.6	88.4	...
1910	4,341,483	30,088,468	...	34,424,951	12.6	87.4	...
1911	1,467,119	28,874,920	...	30,342,099	11.4	88.6	...
1912	3,739,536	30,674,755	...	34,444,291	10.9	89.1	...
1913	3,691,923	32,593,545	...	36,285,468	10.2	89.8	...
1914	2,586,408	16,008,558	<sup>a</sup> 141,446	18,736,407	13.8	85.4	<sup>a</sup> 0.8
1915	2,126,670	20,192,110	291,734	22,327,046	9.4	89.3	1.3
1916	2,414,387	31,579,032	533,153	34,526,452	7.0	91.5	1.5
1917	4,728,453	35,723,566	1,225,967	41,677,936	11.3	85.7	8.0
1918	5,140,406	40,039,873	2,738,924	47,919,202	10.7	88.6	5.7
1919	2,647,869	30,829,594	1,848,445	34,225,908	7.2	87.5	5.3
1920	4,337,601	37,280,708	3,658,773	45,227,077	9.6	82.3	8.1
1921	1,681,118	29,101,647	1,460,092	32,242,857	5.2	90.8	4.5

<sup>a</sup> Not separately reported in previous years.

<sup>b</sup> Includes 16,532 tons for which the method of production was not reported.

TABLE 4  
Fluctuation of Coal Production in Ohio for the Year Ending December 31, 1921—By Counties.

County.	Number of Mines Reporting.	Number of Tons Produced During the Month of											Total.	
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.		
Athens	101	379,065	272,700	275,474	221,287	321,956	346,619	360,717	307,073	301,800	540,781	388,970	298,632	4,154,994
Belmont	181	980,168	730,828	866,710	946,181	1,168,069	1,180,022	1,046,187	1,008,861	946,816	1,123,711	985,997	799,668	11,684,028
Carroll	20	28,881	23,186	25,100	10,166	11,444	23,966	28,986	27,589	32,167	26,852	26,852	26,852	26,852
Columbiana	46	42,658	47,468	41,761	25,101	25,482	53,127	64,096	63,762	48,832	63,656	71,866	84,761	666,880
Coohocton	47	27,870	24,248	17,146	10,621	11,626	11,156	11,174	17,926	19,956	32,009	21,920	19,378	224,720
Gallia	16	598	689	493	410	684	658	921	1,190	1,129	1,185	985	688	9,967
Guernsey	45	289,113	203,927	166,008	113,249	265,759	809,721	298,967	284,707	287,056	249,090	280,274	209,618	2,985,084
Harrison	44	123,488	104,688	105,688	124,216	188,028	159,511	168,458	182,621	182,621	182,621	182,621	182,621	1,678,116
Hocking	69	64,860	40,782	36,781	24,028	38,946	45,672	43,802	65,656	62,845	80,886	41,681	38,713	867,704
Holmes	9	989	647	401	694	632	491	486	548	548	1,022	1,168	1,140	9,484
Jackson	51	28,837	18,204	18,747	8,464	11,895	11,804	13,218	15,754	16,103	19,415	14,226	11,649	187,886
Jefferson	83	414,126	320,565	313,248	258,627	408,404	404,473	401,658	422,906	341,208	488,559	378,888	343,641	4,441,387
Lawrence	22	8,082	6,546	8,901	3,271	3,582	4,166	8,608	4,361	6,075	5,663	4,988	5,149	58,731
Mahoning	19	5,920	3,570	2,248	1,667	1,887	1,874	1,741	3,400	4,090	4,490	5,040	5,894	40,550
Medina	3	285	201	142	182	235	300	198	225	203	196	198	120	2,404
Meigs	36	74,866	56,384	64,267	102,886	119,012	108,676	80,490	79,688	65,010	99,770	69,174	29,666	941,474
Monroe	1	60	47	82	40	40	40	40	46	46	35	28	59	459
Morgan	2	27,859	22,108	9,076	18,855	18,571	16,749	10,968	11,926	38,865	26,820	2,738	198,726	
Muskingum	46	26,581	17,884	11,447	4,288	11,888	13,423	12,859	20,375	16,247	20,063	21,173	18,287	198,920
Noble	16	46,752	31,104	20,987	17,406	60,269	74,429	70,560	67,677	62,598	57,607	23,050	18,316	540,694
Perry	94	227,820	158,614	146,909	107,242	117,073	105,929	86,478	119,650	112,245	159,542	127,544	110,823	1,600,510
Portage	4	7,852	8,844	4,787	2,019	3,055	2,806	3,288	7,623	7,477	11,314	5,819	3,731	67,615
Scioto	2	70	80	109	80	70	93	7	64	66	35	80	80	67,798
Stark	70	28,387	24,456	14,456	16,689	18,987	18,987	21,333	30,466	29,781	38,926	38,414	81,120	459
Summit	6	7872	6233	178	113	164	286	660	2,159	1,766	3,006	1,829	1,577	12,682
Trumbull	1	52	81	86	33	36	101	21	147	91	146	91	79	813
Tuscarawas	112	127,640	99,417	101,147	81,394	88,120	69,180	100,874	149,822	107,079	103,907	1,207,189	1,207,189	1,207,189
Vinton	11	9,733	5,121	7,343	9,141	7,523	9,156	8,758	11,912	8,933	9,188	3,851	96,118	96,118
Washington	4	6,659	4,668	4,622	4,600	4,68	436	436	436	587	636	629	679	6,719
Wayne	6	5,116	4,744	5,162	110	70	50	159	315	678	984	792	18,687	18,687
State	1,104	2,880,984	2,222,121	2,268,902	1,988,699	2,841,697	2,949,692	2,788,896	2,984,816	2,709,670	3,542,578	2,712,476	2,272,066	32,242,867

TABLE 5  
Coal Production for the Year Ending December 31, 1921, Classified According to  
Disposition of Product—By Counties

County.	Total Production.	Number of Tons			
		Used in		Sold to	
		Operation of Mine.	Local Trade.	Mfg. Processes in Connection With Mine.	Shipping Trade.
Athens	4,154,994	94,566	40,848	4,755	4,014,825
Belmont	11,634,028	113,161	172,770	316,191	11,031,906
Carroll	287,833	7,013	4,023	43,069	238,728
Columbiana	566,880	9,145	85,614	27,132	446,989
Coshocton	224,729	1,800	41,382	1,917	179,630
Gallia	9,367	40	5,964	47	3,316
Guernsey	2,983,034	104,596	58,365	3,280	2,816,793
Harrison	1,879,116	36,574	28,476	.....	1,819,066
Hocking	567,704	3,254	3,353	24,612	536,485
Holmes	9,484	27	9,457	.....	.....
Jackson	187,886	8,186	17,682	48,381	113,637
Jefferson	4,441,357	58,377	165,532	133,749	4,063,699
Lawrence	58,731	1,222	32,129	13,519	11,861
Mahoning	40,550	1,349	38,463	.....	738
Medina	2,404	160	2,244	.....	.....
Meigs	941,773	29,811	19,236	.....	892,726
Monroe	439	8	481	.....	.....
Morgan	198,788	2,753	1,312	.....	194,728
Muskingum	193,920	3,473	54,646	9,691	126,110
Noble	540,694	18,119	10,051	.....	512,524
Perry	1,600,510	30,943	22,944	27,178	1,519,445
Portage	67,615	10,222	10,030	.....	47,368
Scioto	793	15	507	186	85
Stark	310,120	8,025	163,750	49,091	89,254
Summit	12,632	1,682	10,950	.....	.....
Trumbull	813	15	798	.....	.....
Tuscarawas	1,207,139	22,105	129,786	139,512	915,736
Vinton	95,118	3,473	343	7,149	84,153
Washington	5,719	16	2,352	.....	3,351
Wayne	18,687	1,001	3,636	.....	14,050
State	32,242,857	571,131	1,130,074	849,459	29,692,198

TABLE 6

Mining Machines — Number, Motive Power, and Production for the Year Ending December 31, 1921 — By Counties

County.	Number of Mines in Which Machines Are Used.	Number of Machines Operated by		Total Number of Mining Machines Used.	Number of Tons Produced by		Total Tons Produced by Mining Machines.
		Electricity.	Compressed Air.		Electric Machines.	Compressed Air Machines.	
Athens .....	93	342	.....	342	4,077,764	.....	4,077,764
Belmont .....	97	671	1	672	11,396,610	1,147	11,397,757
Carroll .....	7	32	.....	32	242,767	.....	242,767
Columbiana .....	13	50	.....	50	438,587	.....	438,587
Coshocton .....	10	25	.....	25	141,429	.....	141,429
Guernsey .....	30	168	.....	168	2,900,560	.....	2,900,560
Harrison .....	13	83	.....	83	1,420,444	.....	1,420,444
Hocking .....	51	83	.....	83	518,224	.....	518,224
Jackson .....	11	24	.....	24	97,972	.....	97,972
Jefferson .....	45	292	.....	292	3,918,383	.....	3,918,383
Lawrence .....	1	1	.....	1	8,818	.....	8,818
Mahoning .....	4	4	.....	4	18,624	.....	18,624
Meigs .....	22	127	.....	127	924,450	.....	924,450
Morgan .....	2	17	.....	17	198,788	.....	198,788
Muskingum .....	10	29	.....	29	128,097	.....	128,097
Noble .....	4	31	.....	31	586,407	.....	586,407
Perry .....	63	188	.....	188	968,571	.....	968,571
Portage .....	2	4	.....	4	58,470	.....	58,470
Stark .....	6	11	1	12	138,598	2,916	141,514
Tuscarawas .....	35	105	5	110	878,287	9,709	882,916
Vinton .....	6	13	.....	13	87,887	.....	87,887
Washington .....	1	2	.....	2	4,288	.....	4,288
Wayne .....	1	3	.....	3	14,500	.....	14,500
State .....	527	2,300	7	2,307	29,067,875	13,772	29,161,647

TABLE 7

Mining Machines in Use and Average Number of Tons of Coal Cut Per Machine Per Year and Per Day, 1920 Compared With 1921—By Counties.

County.	Number of Machines in Use.		Average Number of Tons Cut Per Machine Per Year.		Average Number of Tons Cut Per Machine Per Day.	
	1920	1921	1920	1921	1920	1921
Athens .....	333	342	20,349	11,923	119.0	113.5
Belmont .....	622	672	16,979	16,960	94.3	94.7
Carroll .....	21	32	13,370	7,586	68.9	47.4
Columbiana .....	50	50	15,600	8,671	66.9	68.3
Coshocton .....	24	25	11,337	5,657	61.6	60.8
Guernsey .....	149	168	23,865	17,265	137.1	129.9
Harrison .....	74	83	16,326	17,113	100.7	102.5
Hocking .....	111	83	15,123	693	87.4	9.4
Jackson .....	38	24	8,280	4,082	42.9	51.0
Jefferson .....	285	292	17,027	13,402	80.7	98.7
Lawrence .....	1	1	6,500	3,818	32.5	19.1
Mahoning .....	3	4	6,166	3,406	30.4	30.7
Meigs .....	157	127	9,087	7,279	52.2	58.2
Morgan .....	16	17	17,303	11,693	101.1	99.1
Muskingum .....	38	29	7,561	4,245	45.5	68.5
Noble .....	29	31	21,802	17,303	132.9	121.0
Perry .....	196	183	12,945	5,293	77.9	79.0
Portage .....	4	4	27,709	14,618	100.0	134.1
Stark .....	16	12	11,670	11,793	47.4	54.3
Tuscarawas .....	102	110	11,678	8,027	61.5	62.2
Vinton .....	25	13	9,044	6,722	51.1	45.4
Washington .....	4	2	3,645	2,144	20.8	9.1
Wayne .....	3	3	14,416	4,833	70.7	66.2
State .....	2,301	2,307	16,180	12,614	82.1	92.8

TABLE 8

Mining Machines in Use and Average Number of Tons of Coal Cut Per Machine  
Per Year and Per Day, 1904 to 1921, Inclusive.

Year.	Total Number of Mining Machines in Use.	Average Number of Tons Cut Per Machine Per Year.	Average Number of Tons Cut Per Machine Per Day.
1904 .....	975	16,971	99.2
1905 .....	1,146	16,588	95.9
1906 .....	1,266	16,361	94.6
1907 .....	1,396	18,520	89.9
1908 .....	1,445	14,956	95.3
1909 .....	1,395	16,593	97.0
1910 .....	1,473	20,423	101.6
1911 .....	1,542	17,429	100.2
1912 .....	1,549	19,808	100.0
1913 .....	1,653	19,718	96.7
1914 .....	1,610	9,943	98.4
1915 .....	1,443	13,978	102.0
1916 .....	1,600	19,737	100.2
1917 .....	1,743	20,495	100.5
1918 .....	2,035	19,676	89.0
1919 .....	2,060	14,966	93.5
1920 .....	2,801	16,180	82.1
1921 .....	2,307	12,614	92.8

TABLE 9

Haulage Methods in Coal Mines Reported in Operation During the Year Ending December 31, 1921—By Counties.

(Thirty-six stripping mines and three mines for which method of haulage was not reported, are not included in this table)

County.	Number of Mines Reporting Kind of Haulage	Number of Mines Having Each Specified Kind of Haulage.						
		Motor	Cable	Animal	Hand	Motor and Animal	Cable and Animal	Motor and Cable
Athens .....	101	35	1	40	1	24	.....	.....
Belmont .....	130	28	1	54	7	40	.....	.....
Carroll .....	19	5	.....	11	1	2	.....	.....
Columbiana .....	45	6	1	26	8	3	.....	1
Coshocton .....	47	5	1	30	7	3	1	.....
Gallia .....	16	.....	.....	4	12	.....	.....	.....
Guernsey .....	44	9	2	9	7	15	2	.....
Harrison .....	35	3	1	4	19	8	.....	.....
Hocking .....	59	6	.....	45	.....	8	.....	.....
Holmes .....	9	.....	.....	4	5	.....	.....	.....
Jackson .....	51	1	.....	34	10	6	.....	.....
Jefferson .....	69	13	.....	29	10	17	.....	.....
Lawrence .....	22	.....	.....	12	10	.....	.....	.....
Mahoning .....	18	.....	.....	14	4	.....	.....	.....
Medina .....	3	.....	.....	3	.....	.....	.....	.....
Meigs .....	35	13	.....	18	.....	4	.....	.....
Monroe .....	1	.....	.....	.....	1	.....	.....	.....
Morgan .....	2	2	.....	.....	.....	.....	.....	.....
Muskingum .....	43	2	.....	34	6	1	.....	.....
Noble .....	15	.....	.....	2	9	4	.....	.....
Perry .....	89	23	.....	52	6	6	.....	.....
Portage .....	4	.....	.....	2	1	1	.....	.....
Scioto .....	2	.....	.....	.....	2	.....	.....	.....
Stark .....	69	1	.....	39	28	1	.....	.....
Summit .....	5	.....	.....	3	2	.....	.....	.....
Trumbull .....	1	.....	.....	.....	1	.....	.....	.....
Tuscarawas .....	110	8	3	78	6	10	5	.....
Vinton .....	11	1	.....	7	1	2	.....	.....
Washington .....	4	.....	.....	2	2	.....	.....	.....
Wayne .....	6	.....	.....	4	2	.....	.....	.....
State ....	1,065	161	10	560	168	157	8	1

TABLE 10

Character of Openings of Coal Mines Reported in Operation During the Year  
Ending December 31, 1921 — By Counties.

(Thirty-six stripping mines and two mines for which the kind of opening was not reported,  
are not included in this table)

County.	Total Number of Mines Reporting Kind of Opening.	Number of Mines Having Each Specified Kind of Opening.		
		Drift	Slope	Shaft
Athens .....	101	60	18	23
Belmont .....	130	96	25	9
Carroll .....	19	14	4	1
Columbiana .....	45	29	10	6
Coshcotton .....	47	39	8	.....
Gallia .....	16	15	1	.....
Guernsey .....	44	14	9	21
Harrison .....	35	30	4	1
Hocking .....	59	56	3	.....
Holmes .....	9	9	.....	.....
Jackson .....	51	41	3	7
Jefferson .....	69	56	5	8
Lawrence .....	22	22	.....	.....
Mahoning .....	18	4	10	4
Medina .....	3	.....	3	.....
Meigs .....	35	30	3	2
Monroe .....	1	.....	1	.....
Morgan .....	2	1	1	.....
Muskingum .....	43	33	10	.....
Noble .....	15	11	.....	4
Perry .....	90	67	17	6
Portage .....	4	1	.....	3
Scioto .....	2	2	.....	.....
Stark .....	69	47	11	11
Summit .....	5	1	1	3
Trumbull .....	1	.....	.....	1
Tuscarawas .....	110	97	12	1
Vinton .....	11	9	1	1
Washington .....	4	.....	3	1
Wayne .....	6	1	2	3
State .....	1,066	785	165	116

TABLE 11

Ventilation Methods in Coal Mines Reported in Operation During the Year Ending December 31, 1921—By Counties.

(Thirty-six stripping mines and two mines for which the kind of ventilation was not reported, are not included in this table)

County.	Total Number of Mines Reporting Kind of Ventilation.	Number of Mines Having Each Specified Kind of Ventilation.						Combination of Two or More Preceding Methods.
		Fan.	Fire Basket.	Furnace.	Exhaust Steam.	Natural		
Athens . . . . .	101	78	3	20			20	3
Belmont . . . . .	130	95		3			9	3
Carroll . . . . .	19	11			3		1	4
Columbiana . . . . .	45	16			2		26	1
Coshocton . . . . .	47	9			12		24	2
Gallia . . . . .	16		1		2		18	
Guernsey . . . . .	44	31			2		11	
Harrison . . . . .	35	15			1		18	1
Hocking . . . . .	59	25			1		26	7
Holmes . . . . .	9				3		5	1
Jackson . . . . .	51	17	3		15		14	2
Jefferson . . . . .	69	48	2		9		7	3
Lawrence . . . . .	22	1			9		10	2
Mahoning . . . . .	18	7					8	3
Medina . . . . .	3						3	
Meigs . . . . .	35	18			3		10	4
Monroe . . . . .	1				1			
Morgan . . . . .	2	2						
Muskingum . . . . .	43	13	1		4		25	
Noble . . . . .	15	4					11	
Perry . . . . .	90	59	2		4		21	4
Portage . . . . .	4	2					1	1
Scioto . . . . .	2				2			
Stark . . . . .	69	17	1		10	3	35	3
Summit . . . . .	5	2				2		1
Trumbull . . . . .	1						1	
Tuscarawas . . . . .	110	52	3		22		29	4
Vinton . . . . .	11	8			1		1	1
Washington . . . . .	4	1			2		1	
Wayne . . . . .	6	3						3
State . . . . .	1,066	584	16		128	5	880	58

TABLE 12.  
Average Number of Employees in Pick, Machine and Stripping Mines, 1921 Compared With 1920—By Counties.

County.	In Pick Mines,		In Machine Mines,		In Stripping Mines.		Total.		Gain in Total Employees.		Number	Per Cent	Loss in Total Employees.
	1920	1921	1920	1921	1920	1921	1920	1921	1921	Number			
Athens .....	102	64	8,280	8,530	112	60	8,382	8,594	212	2.5	.....	.....	.....
Belmont .....	298	141	11,350	13,998	.....	.....	11,760	14,199	2,439	20.7	.....	.....	.....
Carroll .....	175	113	411	457	34	15	586	585	.....	.....	1	.....	.....
Columbiana .....	273	200	914	1,047	34	34	1,221	1,281	60	a	.....	.....	.....
Coshcotton .....	315	252	413	522	.....	.....	728	744	16	a	.....	.....	.....
Gallia .....	64	26	4,020	4,437	41	42	4,242	4,550	308	7.3	.....	.....	.....
Guernsey .....	181	54	1,439	1,630	511	466	2,040	2,150	110	5.4	.....	.....	.....
Harrison .....	90	48	2,040	1,676	.....	.....	2,139	1,724	.....	.....	415	19.4	.....
Hocking .....	99	29	.....	.....	.....	.....	38	29	.....	.....	9	.....	.....
Holmes .....	38	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson .....	889	318	844	617	.....	.....	1,733	935	.....	.....	798	46.0	.....
Jefferson .....	283	177	5,087	5,858	1,090	482	6,460	6,517	57	a	.....	.....	.....
Lawrence .....	492	278	24	27	.....	.....	516	505	.....	.....	211	40.9	.....
Mahoning .....	83	100	44	66	b	3	127	169	42	a	.....	.....	.....
Medina .....	14	10	.....	.....	.....	.....	14	10	.....	.....	4	.....	.....
Meigs .....	165	35	2,395	2,101	.....	.....	2,560	2,136	.....	.....	424	16.6	.....
Monroe .....	3	3	.....	.....	.....	.....	3	3	.....	.....	5	.....	.....
Morgan .....	345	173	539	447	77	47	939	447	.....	.....	92	17.1	.....
Muskingum .....	18	21	521	420	.....	.....	640	726	848	122	16.8	303	32.1
Noble .....	489	154	3,697	3,804	338	264	4,524	4,222	.....	.....	.....	.....	.....
Perry .....	5	.....	.....	.....	.....	.....	5	5	.....	.....	.....	.....	.....
Pike .....	9	8	146	163	.....	.....	155	171	16	a	.....	.....	.....
Portage .....	4	2	.....	.....	.....	.....	4	2	.....	.....	2	a	.....
Scioto .....	563	553	344	246	3	4	910	803	88	22	107	11.8	.....
Stark .....	66	88	.....	.....	.....	.....	66	66	4	2,444	2	221	8.3
Summit .....	6	4	527	1,620	1,793	204	124	2,665	2,444	.....	.....	.....	.....
Tuscarawas .....	841	527	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Vinton	184	82	b 568	280	.....	752	362	390	51.9
Washington	8	10	48	10	.....	56	20	36	a
Wayne	73	22	60	59	.....	133	81	52	a
State	6,175	3,533	45,512	49,015	2,410	1,541	54,097	54,089	.....
Net Loss—Number	.....	.....	.....	.....	.....	.....	.....	.....	8
Per Cent	.....	.....	.....	.....	.....	.....	.....	.....	0.01

a Not computed owing to small number.

b Own work.

TABLE 13

Average Number and Per Cent of Employees Reported Annually in Pick, Machine and Stripping Mines — 1904 to 1921, Inclusive.

Year.	Average Number of Employees.				Per Cent of Total Employees.		
	In Pick Mines.	In Machine Mines.	In Stripping Mines.	Total.	Pick.	Machine	Stripping.
1904 .....	17,723	28,111	.....	45,834	38.7	61.3	.....
1905 .....	14,138	30,055	.....	44,193	32.0	68.0	.....
1906 .....	18,128	33,373	.....	46,501	28.2	71.8	.....
1907 .....	12,927	34,949	.....	47,876	27.0	73.0	.....
1908 .....	11,938	38,330	.....	50,267	23.7	76.3	.....
1909 .....	10,334	36,685	.....	47,019	22.0	78.0	.....
1910 .....	9,607	39,223	.....	48,830	19.7	80.3	.....
1911 .....	7,744	40,633	.....	48,407	16.0	84.0	.....
1912 .....	7,841	39,393	.....	47,234	16.6	83.4	.....
1913 .....	7,303	41,117	.....	48,420	15.1	84.9	.....
1914 .....	5,143	41,822	.....	46,965	11.0	89.0	.....
1915 .....	3,882	37,548	.....	41,430	9.4	90.6	.....
1916 .....	3,511	38,121	.....	41,632	8.4	91.6	.....
1917 .....	6,923	42,996	.....	49,919	13.9	86.1	.....
1918 .....	6,776	44,497	(a) 1,819	53,092	12.8	83.8	3.4
1919 .....	4,833	44,036	1,608	50,477	9.6	87.2	3.2
1920 .....	6,175	45,512	2,410	54,097	11.4	84.1	4.5
1921 .....	3,533	49,015	1,541	54,089	6.5	90.6	2.9

(a) Average number of employees in stripping mines was not shown previous to 1918.

TABLE 14  
Average Number of Employees in Pick Mines by Occupations, 1920 Compared  
With 1921—By Counties.

County.	Pick Miners.		Inside Day Hands.		Outside Day Hands.		Total.	
	1920	1921	1920	1921	1920	1921	1920	1921
Athens . . . . .	84	48	7	6	11	10	102	64
Belmont . . . . .	207	114	42	16	49	11	298	141
Carroll . . . . .	105	84	42	21	28	8	175	113
Columbiana . . . . .	221	152	29	28	23	20	273	200
Coshocton . . . . .	227	162	62	45	26	15	315	222
Gallia . . . . .	48	23	8	.....	8	3	64	26
Guernsey . . . . .	115	50	34	7	32	14	181	71
Harrison . . . . .	74	48	9	3	7	3	90	54
Hocking . . . . .	81	41	10	4	8	3	99	48
Holmes . . . . .	33	28	2	1	3	.....	38	29
Jackson . . . . .	606	232	155	52	128	34	889	318
Jefferson . . . . .	172	145	45	16	66	16	283	177
Lawrence . . . . .	329	194	77	53	86	31	492	278
Mahoning . . . . .	68	85	8	8	7	7	83	100
Medina . . . . .	9	6	4	4	1	.....	14	10
Meigs . . . . .	122	30	22	2	21	3	165	35
Monroe . . . . .	3	3	.....	.....	.....	3	3	3
Morgan . . . . .	.....	.....	.....	.....	.....	.....	.....	.....
Muskingum . . . . .	258	143	45	16	42	14	345	173
Noble . . . . .	18	21	.....	.....	.....	.....	18	21
Perry . . . . .	341	114	79	23	69	17	489	154
Pike . . . . .	2	.....	.....	.....	3	.....	5	.....
Portage . . . . .	4	6	3	1	2	1	9	8
Scioto . . . . .	4	2	.....	.....	.....	.....	4	2
Stark . . . . .	389	382	87	85	87	86	563	553
Summit . . . . .	43	62	7	14	16	12	66	88
Trumbull . . . . .	6	3	.....	.....	.....	1	6	4
Tuscarawas . . . . .	598	381	134	92	109	54	841	527
Vinton . . . . .	113	55	37	14	34	13	184	82
Washington . . . . .	8	6	.....	2	.....	2	8	10
Wayne . . . . .	47	16	13	1	13	5	73	22
State . . . . .	4,335	2,636	961	514	879	383	6,175	3,533

TABLE 15.  
Average Number of Employees in Machine Mines by Occupations 1920 Compared With 1921—By Counties.

County.	Machine Runners and Helpers.		Loaders (Including Drillers and Shooters.)		Pick Miners in Machine Mines.		Inside Day Hands.		Outside Day Hands.		Total.	
	1920	1921	1920	1921	1920	1921	1920	1921	1920	1921	1920	1921
Athens .....	574	581	4,716	5,182	68	138	1,881	1,697	1,041	932	8,280	8,530
Belmont .....	1,020	1,172	5,990	8,360	138	172	2,638	2,866	1,564	1,428	11,350	13,988
Carroll .....	39	49	200	247	7	5	88	102	77	54	411	457
Columbiana .....	88	85	485	596	.....	10	231	241	110	115	914	1,047
Coshocton .....	38	48	179	259	24	22	107	129	65	64	413	522
Guernsey .....	291	310	2,054	2,438	26	.....	1,236	1,394	413	365	4,020	4,437
Harrison .....	121	124	712	924	8	.....	347	364	251	218	1,439	1,630
Hocking .....	180	154	1,107	966	71	67	395	289	287	200	2,040	1,676
Jackson .....	70	43	311	276	72	70	259	146	132	82	844	617
Jefferson .....	460	509	2,507	3,356	45	41	1,294	1,558	781	694	5,087	5,888
Lawrence .....	2	2	6	6	6	6	1	1	9	9	24	27
Mahoning .....	6	8	17	33	2	2	11	12	8	11	44	66
Meigs .....	167	155	1,249	1,202	10	.....	599	468	370	276	2,395	2,101
Morgan .....	33	38	210	265	.....	.....	246	100	50	44	539	447
Muskingum .....	58	48	259	259	26	.....	103	77	75	36	521	420
Noble .....	44	56	361	453	.....	.....	250	258	53	60	708	827
Perry .....	321	291	1,950	1,899	133	545	771	669	522	400	3,697	3,804
Portage .....	8	8	62	72	6	10	37	40	33	33	146	163
Stark .....	28	22	162	156	42	.....	63	46	49	22	344	246
Tuscarawas .....	171	202	709	921	66	36	416	380	258	254	1,620	1,793
Vinton .....	48	25	258	163	34	5	111	48	117	39	568	280
Washington .....	4	2	16	6	.....	.....	12	16	2	12	48	10
Wayne .....	8	7	28	20	.....	.....	15	20	14	12	60	59
State .....	3,779	3,939	23,543	28,078	784	1,123	11,111	10,534	6,295	5,341	45,512	49,015

TABLE 16

Average Number of Days Worked Per Year by Pick Miners in Pick Mines, Loaders (Including Drillers and Shooters) in Machine Mines, and Employees of Stripping Mines, 1920 Compared With 1921 — By Counties.

County.	Average Number of Days Worked By					
	Pick Miners in Pick Mines.		Loaders (In- cluding Drillers and Shooters in Machine Mines.		Employees of Stripping Mines.	
	1920	1921	1920	1921	1920	1921
Athens .....	139	37	171	105	.....	.....
Belmont .....	164	145	180	179	195	55
Carroll .....	231	150	194	160	.....	50
Columbiana .....	169	165	233	127	310	310
Coshocton .....	202	116	184	93	.....	.....
Gallia .....	153	142	.....	.....	.....	.....
Guernsey .....	180	132	174	133	120	70
Harrison .....	179	160	162	167	215	114
Hocking .....	163	97	173	74	.....	.....
Holmes .....	152	164	.....	.....	.....	.....
Jackson .....	174	94	193	80	.....	.....
Jefferson .....	177	150	211	143	232	72
Lawrence .....	201	76	200	200	.....	.....
Mahoning .....	214	186	203	111	.....	18
Medina .....	295	184	.....	.....	.....	.....
Meigs .....	194	125	173	125	.....	.....
Monroe .....	128	156	.....	.....	.....	.....
Morgan .....	.....	.....	171	118	.....	.....
Muskingum .....	171	106	166	62	117	107
Noble .....	147	137	164	143	.....	.....
Perry .....	140	58	166	67	230	88
Pike .....	60	.....	.....	.....	.....	.....
Portage .....	167	160	277	109	.....	.....
Scioto .....	104	250	.....	.....	.....	.....
Stark .....	189	126	246	217	115	160
Summit .....	132	47	.....	.....	.....	.....
Trumbull .....	240	200	.....	.....	.....	.....
Tuscarawas .....	193	133	190	129	184	61
Vinton .....	162	34	177	148	.....	.....
Washington .....	113	238	175	236	.....	.....
Wayne .....	182	136	204	73	.....	.....
State .....	179	89	197	136	218	91

TABLE 17

Average Number of Days Worked Per Year by Pick Miners in Pick Mines, by Loaders, (Including Drillers and Shooters) in Machine Mines and by Employees in Stripping Mines — 1904 to 1921 Inclusive.

(Pick miners employed in machine mines are not included in this table)

Year.	Average Number of Days Worked by		
	Pick Miners in Pick Mines.	Loaders (Including Drillers and Shooters in Machine Mines.)	Employees of Stripping Mines.
1904	159	169	.....
1905	169	169	.....
1906	176	173	.....
1907	191	201	.....
1908	160	157	.....
1909	182	172	.....
1910	168	209	.....
1911	168	175	.....
1912	173	199	.....
1913	189	206	.....
1914	150	101	.....
1915	168	137	.....
1916	182	197	.....
1917	188	204	.....
1918	205	221	(a) 232
1919	148	160	164
1920	179	197	218
1921	89	136	91

(a) Previous to 1918 average number of days worked by employees of stripping mines was not shown.

TABLE 18  
Fluctuation in Number of Employees in Coal Mines (Including Stripping Mines) Reported in Operation During the Year Ending December 31, 1921—By Counties.

(Forty-seven mines in which the owners did their own work and four mines for which incomplete data were furnished, are not included in this table.)

County.	Number of Mines Reporting.	Number of Employees on the Payroll Nearest the Fifteenth of										Variation From Maximum.		
		Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	No.
Athens .....	100	7,234	5,894	5,996	4,899	5,758	6,400	6,623	6,916	7,527	7,571	6,678	2,672	35.3
Belmont .....	130	12,476	12,088	12,086	12,086	12,752	12,570	12,890	13,086	12,418	13,013	11,916	1,181	9.0
Carroll .....	20	642	532	483	1,066	630	822	864	457	466	499	499	315	58.1
Columbiana .....	44	921	1,116	1,116	1,116	576	458	304	311	266	986	1,013	1,123	988
Coshocton .....	44	603	16	16	16	12	12	13	14	20	25	521	544	499
Gallia .....	9	16	16	16	16	12	12	12	12	12	20	20	16	14
Guernsey .....	40	4,369	4,329	4,010	3,975	3,975	4,024	4,020	4,013	4,309	4,290	4,204	425	9.7
Harrison .....	43	1,880	1,696	1,621	1,621	1,628	1,594	1,594	1,521	1,624	2,201	2,176	2,056	680
Hocking .....	67	1,680	1,376	1,351	1,049	1,008	967	1,001	1,001	1,860	1,800	1,888	1,104	38.3
Holmes .....	9	29	23	17	17	16	16	16	16	24	29	32	30	21
Jackson .....	46	810	690	654	450	273	322	474	499	514	508	508	543	66.5
Jefferson .....	50	5,460	5,381	5,051	5,074	5,230	5,213	5,182	5,247	5,264	5,367	5,673	5,457	622
Lawrence .....	22	298	160	116	96	96	103	119	119	134	183	100	90	205
Madison .....	18	164	136	98	83	65	57	55	55	124	128	148	104	66.4
Medina .....	3	11	8	7	7	10	12	6	6	6	6	6	5	7
Meigs .....	36	1,963	1,661	1,600	1,490	1,548	1,790	1,447	1,086	1,454	1,273	1,543	806	1,157
Monroe .....	1	8	2	2	2	2	2	3	3	3	2	2	3	68.9
Morgan .....	2	374	386	228	13	206	285	297	417	447	451	234	438	97.1
Muskingum .....	43	671	471	358	160	388	360	338	350	436	382	411	349	70.3
Noble .....	19	785	742	797	814	763	786	786	797	790	807	788	756	70.7
Perry .....	89	3,560	2,882	2,587	2,184	1,798	1,865	1,676	1,983	2,259	2,481	2,570	2,832	1,894
Portage .....	3	171	174	180	164	164	168	172	174	166	177	172	112	68
Scioto .....	1	2	3	3	1	1	1	2	3	3	3	3	2	6
Stark .....	66	663	561	531	519	468	484	502	577	600	559	647	637	184
Summit .....	5	31	29	27	5	63	56	56	61	58	61	56	56	29.4
Trumbull .....	1	3	3	3	3	3	3	3	4	4	4	4	4	4
Tuscarawas .....	111	2,177	2,034	1,840	1,745	1,647	1,655	1,582	1,479	1,678	2,016	1,850	1,157	68.0
Wayne .....	11	410	182	211	181	223	223	217	298	298	292	174	273	69.5
Washington .....	3	14	17	14	11	15	8	11	20	22	26	24	16	67.6
Wayne .....	6	70	64	63	.....	.....	.....	6	6	11	26	28	26	65
State .....	1,068	47,196	43,228	41,600	37,796	39,263	40,975	41,129	41,979	43,018	46,249	45,719	41,404	19.9

<sup>a</sup> Not computed, owing to small number represented.

TABLE 19  
Average Number of Tons of Coal Produced Per Year and Per Day Per Employee in Certain Specified Occupations, 1921 Compared With 1920—By Counties.  
(Pick miners employed in machine mines and mines in which owners did their own work and mines for which no data were given are not included in this table.)

Trumbull	486	271	1.8	1.4	6,966	4,371	87.0	33.9	1,980	969	6.8	7.4	1,781	420	9.4	6.9	
Tuscarawas	1,017	644	5.3	4.8	4,710	3,456	26.6	23.6	876	596	4.9	3.6	715	6.2	8.0	.....	
Vinton	714	118	4.4	3.5	8,710	8,645	20.8	9.1	911	725	9.2	9.9	1,380	.....	.....	.....	
Washington	268	216	2.8	6	8,645	2,144	26.5	28.4	1,580	1,577	1,086	8.0	7.6	1,518	948	6.9	10.4
Wayne	182	243	1.0	1.8	6,406	2,071	54.8	50.0	54.8	54.8	1,577	1,577	1,577	1,577	1,577	1,577	1,577
State	786	421	4.4	4.7	9,888	7,385	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>a</sup>The tonnage per day for machine runners and helpers is computed on the assumption that they worked the same number of days as did the loaders in their respective mines.

<sup>b</sup>Not computed owing to small number.

TABLE 20

Average Number of Tons of Coal Produced Per Year and Per Day Per Employe in Specified Occupations, 1895 to 1921 Inclusive.

Year.	Pick Mines.		Machine Mines.			Stripping Mines.		
	Pick Miners.		Runners and Helpers		Loaders (including Drillers and Shooters).		Outside Employes <sup>c</sup>	
	Average Number of Tons Mined Per Year.	Average Number of Tons Mined Per Day.	Average Number of Tons Cut Per Year.	Average Number of Tons Cut Per Day. <sup>a</sup>	Average Number of Tons Loaded Per Year.	Average Number of Tons Loaded Per Day.	Average Number of Tons Produced Per Year.	Average Number of Tons Produced Per Day.
1895	568	3.4	6,981	44.7	926	5.9	.....	.....
1896	431	2.9	5,817	40.4	775	5.4	.....	.....
1897	509	3.4	5,610	41.6	821	6.1	.....	.....
1898	546	3.6	6,524	38.2	892	5.2	.....	.....
1899	443	2.9	8,016	43.6	1,070	6.8	.....	.....
1900	411	2.4	8,467	47.4	1,128	6.3	.....	.....
1901	395	2.2	6,247	34.3	1,155	6.4	.....	.....
1902	380	2.2	9,478	49.9	1,212	6.4	.....	.....
1903	640	3.6	7,471	39.3	1,027	5.4	.....	.....
1904	602	3.8	7,204	42.0	684	4.0	.....	.....
1905	653	3.9	7,255	41.8	686	4.0	.....	.....
1906	661	3.8	7,155	41.4	991	5.7	.....	.....
1907	676	3.5	8,725	42.4	1,187	5.8	.....	.....
1908	518	3.2	6,828	48.5	989	5.5	.....	.....
1909	595	3.3	7,327	42.8	972	5.7	.....	.....
1910	602	3.6	9,138	45.5	1,195	5.7	.....	.....
1911	597	3.6	7,904	45.4	1,015	5.8	.....	.....
1912	641	3.7	8,840	44.6	1,218	6.1	.....	.....
1913	681	3.6	8,890	42.6	1,260	6.1	.....	.....
1914	508	3.3	<sup>a</sup> 4,564	<sup>a</sup> 45.2	622	6.1	.....	.....
1915	591	3.5	<sup>a</sup> 6,395	<sup>a</sup> 46.7	841	6.1	.....	.....
1916	659	3.6	<sup>a</sup> 9,966	<sup>a</sup> 50.6	1,859	6.9	.....	.....
1917	733	3.9	<sup>a</sup> 9,402	<sup>a</sup> 46.1	1,494	7.8	.....	.....
1918	821	4.0	<sup>a</sup> 10,595	<sup>a</sup> 49.8	1,770	7.7	<sup>b</sup> 1,506	<sup>b</sup> 6.5
1919	582	3.9	<sup>a</sup> 8,394	<sup>a</sup> 52.5	1,284	8.0	<sup>b</sup> 1,150	<sup>b</sup> 7.0
1920	786	4.4	<sup>a</sup> 9,828	<sup>a</sup> 50.0	1,577	8.0	<sup>b</sup> 1,518	<sup>b</sup> 6.9
1921	421	4.7	<sup>a</sup> 7,885	<sup>a</sup> 54.3	1,036	7.6	<sup>b</sup> 948	<sup>b</sup> 10.4

<sup>a</sup> The tonnage per day, 1914 to 1921 inclusive, for machine runners and helpers is computed on the assumption that they worked the same number of days as did the loaders in their respective mines.

<sup>b</sup> Previous to 1918 average number of tons produced by employes of stripping mines was not shown.

<sup>c</sup> All employes of stripping mines are classified as outside help.

TABLE 21

Total Wage and Salary Payments to Each Class of Employees for the Year Ending December 31, 1921 — By Counties.

(Forty-seven mines in which the owners did their own work and four mines for which incomplete data were furnished are not included in this table)

County.	Total Number of Mines Reporting.	Aggregate Wage and Salary Payments.						
		To Pick Miners.	To Machine Runners and Helpers.	To Loaders (Including Drillers and Shooters.)	To Inside Day Employees.	To Outside Day Employees.	To Office Help.	Total.
Athens .....	100	90,878	671,946	3,686,095	1,964,721	1,204,577	110,978	7,729,190
Belmont .....	130	268,582	1,909,457	9,997,876	5,017,149	2,511,673	180,406	19,885,398
Carroll .....	20	78,388	146,712	199,585	122,382	41,583	9,387	568,187
Columbiana .....	44	128,007	119,098	406,224	336,515	182,702	9,660	1,181,106
Coshocton .....	44	114,721	28,910	137,177	171,581	62,018	3,585	617,492
Gallia .....	9	15,201	.....	.....	.....	820	.....	16,021
Guernsey .....	40	26,826	475,755	2,555,367	2,022,698	725,914	125,332	5,931,892
Harrison .....	43	25,889	389,981	1,189,282	734,840	780,561	42,084	8,142,697
Hocking .....	57	58,111	99,108	542,377	255,587	174,587	18,413	1,148,068
Holmes .....	9	16,799	.....	.....	198	.....	.....	16,997
Jackson .....	46	122,420	20,418	97,488	114,984	79,731	9,109	444,150
Jefferson .....	80	115,582	694,381	3,480,595	2,154,029	1,402,610	127,797	7,974,994
Lawrence .....	22	72,132	975	17,939	10,127	5,889	7,071	114,188
Mahoning .....	18	46,477	5,047	14,388	16,456	18,322	1,075	96,785
Medina .....	3	5,621	.....	.....	4,255	.....	.....	9,876
Meigs .....	35	18,017	186,471	881,983	582,273	294,224	30,047	1,991,896
Monroe .....	1	110	.....	.....	.....	.....	.....	110
Morgan .....	2	.....	36,858	187,809	100,089	66,146	6,028	396,425
Muskingum .....	43	77,409	32,768	108,628	65,734	92,725	9,599	386,863
Noble .....	12	5,001	79,885	461,152	378,400	119,049	16,309	1,059,695
Perry .....	89	182,415	179,061	873,977	651,993	884,061	41,285	2,762,782
Portage .....	3	15,068	14,804	64,655	51,208	62,588	6,510	214,816
Scioto .....	1	1,200	.....	.....	.....	.....	.....	1,200
Stark .....	66	248,112	82,866	154,971	146,118	90,485	15,781	688,333
Summit .....	5	18,833	.....	.....	8,646	8,491	.....	35,970
Trumbull .....	1	2,196	.....	.....	.....	965	.....	8,180
Tuscarawas .....	111	358,566	249,268	757,388	627,399	420,702	45,176	2,453,499
Vinton .....	11	10,217	19,266	86,695	37,851	30,177	7,982	191,088
Washington .....	3	3,470	2,477	56	6,281	1,891	.....	14,126
Wayne .....	5	5,988	3,995	14,548	15,290	10,275	.....	50,046
State .....	1,053	2,127,388	5,897,992	25,916,085	15,594,108	9,197,986	822,984	59,056,523

TABLE 22  
Classified Weekly Wages of Employees in and Around Coal Mines (Including Stripping Mines) for the Week of Greatest Employment During the Year Ending December 31, 1921—By Counties.

TABLE 28  
Classified Weekly Wages of Employees in and Around Mines (Including Stripping Mines) for the Week of Greatest Employment During the Year Ending December 31, 1921—By Occupations.

Occupation Group.	Number Receiving Each Classified Weekly Wage.															
	Under \$6	\$6 but under \$7	\$7 but under \$8	\$8 but under \$9	\$9 but under \$10	\$10 but under \$12	\$12 but under \$15	\$15 but under \$18	\$18 but under \$21	\$21 but under \$25	\$25 but under \$30	\$30 but under \$35	\$35 but under \$50	\$50 or over.	Total.	
Wage Earners—																
Pick Miners <sup>a</sup> —	9	8	6	14	10	62	140	270	388	496	651	496	925	408	3,952	
Machine Runners and Helpers—															4,182	
Loaders, (including Drillers and Shooters)—	30	31	44	86	148	331	490	1,100	1,386	2,321	2,569	3,441	14,868	3,797	30,615	
Other Inside Employees—	10	7	22	13	11	11	48	122	241	191	649	650	1,157	7,119	1,617	11,747
Outside Employees <sup>b</sup> —	18	2	27	11	13	47	73	151	356	516	661	1,244	3,798	1,116	6,037	
Total	76	48	99	128	194	494	816	1,887	2,278	4,075	4,764	6,668	28,081	8,912	68,403	
Office Help—															37	
Males—	6	2	2	3	3	7	8	11	6	22	37	51	101	188	294	
Females—	5	1	1	2	1	4	12	20	17	18	57	18	52	14	198	
Total	11	3	3	9	4	11	20	31	23	40	94	64	129	168	687	
Grand Total	87	61	102	128	188	506	886	1,888	2,301	4,115	4,868	6,727	28,160	9,084	68,990	

<sup>a</sup>This table includes pick miners in both pick and machine mines.

<sup>b</sup>This classification includes employees of stripping mines.

TABLE 24.  
Total Wage and Salary Payments of Coal Mines Reporting from 1916 to 1921 Inclusive.

Year.	Total Number of Mines Reporting.	Aggregate Wage and Salary Payments.						To Office Help.	Total.
		To Pick Miners.	To Machine Runners and Helpers.	To Loaders (Including Drillers and Shooters).	To Inside Day Employees.	To Outside Day Employees.	To Wage Earners.		
1916 <sup>a</sup>	6,896	\$11,094,503	16,751,525	\$79,423,593	\$47,584,929	\$32,960,007	\$136,917,682	\$4,528,193	\$329,260,746
1917	780	1,209	.....	.....	.....	.....	\$27,478,784	\$331,750	\$27,810,534
1918	1,336	1,336	.....	.....	.....	.....	44,245,175	697,175	44,942,666
1919	1,166	\$2,866,613	\$4,396,991	\$20,693,066	\$11,820,037	\$8,604,543	65,198,723	938,803	66,187,526
1920	1,243	6,100,522	6,956,540	32,814,442	20,110,784	15,157,784	.....	1,021,923	49,041,808
1921	1,053	2,127,368	5,397,992	25,916,085	15,594,108	9,197,986	.....	822,984	82,221,689
State	.....	.....	.....	.....	.....	.....	.....	.....	59,056,523

<sup>a</sup> Previous to the year 1916 the average daily wage was reported for each class of employees in and around.

TABLE 25

Number of Days Lost by Each Coal Mine in Ohio by Counties for the Year Ending December 31, 1921.

County.	Number of Mines Reporting.	Contributing Causes.						Total.
		Car Shortage.	Labor Shortage.	Strikes.	Mine Disability.	No Market.	All Other Causes.	
Athens . . . . .	100	2.1	3.0	2.7	6.8	195.0	6.8	215.4
Belmont . . . . .	130	2.9	1.6	1.7	3.9	122.8	9.8	148.2
Carroll . . . . .	20	0.3	.....	7.5	1.1	83.1	5.0	98.9
Columbiana . . . . .	44	0.6	3.0	0.5	4.9	120.0	2.7	181.7
Coshocton . . . . .	44	1.1	0.1	0.02	4.4	162.5	2.2	170.1
Gallia . . . . .	9	.....	.....	.....	.....	92.7	.....	92.7
Guernsey . . . . .	40	1.9	2.4	8.4	8.9	157.0	17.5	196.1
Harrison . . . . .	43	5.0	2.9	5.2	9.1	91.8	2.9	116.9
Hocking . . . . .	57	1.5	0.4	0.5	2.9	130.6	8.5	144.4
Holmes . . . . .	9	.....	.....	.....	.....	84.1	.....	84.1
Jackson . . . . .	46	0.7	0.2	1.7	4.0	138.3	2.6	142.5
Jefferson . . . . .	80	2.7	0.8	1.7	8.7	126.4	9.9	144.8
Lawrence . . . . .	22	.....	.....	0.5	.....	119.9	.....	120.4
Mahoning . . . . .	18	2.2	.....	.....	.....	81.2	.....	83.3
Medina . . . . .	3	.....	.....	.....	.....	73.0	.....	73.0
Meigs . . . . .	35	0.02	.....	1.0	0.9	150.6	8.4	160.9
Monroe . . . . .	1	.....	.....	.....	.....	144.0	.....	144.0
Morgan . . . . .	2	.....	.....	.....	.....	189.0	.....	189.0
Muskingum . . . . .	48	0.1	0.2	2.4	6.7	101.1	11.7	122.2
Noble . . . . .	12	1.2	0.2	0.8	0.2	123.6	2.5	127.7
Perry . . . . .	89	2.5	0.5	0.4	2.5	177.4	3.7	186.9
Portage . . . . .	3	0.7	.....	.....	4.8	127.6	.....	132.7
Scioto . . . . .	1	.....	.....	1.6	1.1	50.0	.....	50.0
Stark . . . . .	66	.....	.....	1.6	1.1	92.5	7.9	108.0
Summit . . . . .	5	.....	.....	.....	.....	157.2	.....	157.2
Trumbull . . . . .	1	.....	.....	.....	.....	100.0	.....	100.0
Tuscarawas . . . . .	111	0.2	0.02	0.9	8.6	102.5	4.6	111.9
Vinton . . . . .	11	.....	.....	0.4	0.7	181.8	8.1	186.0
Washington . . . . .	3	.....	.....	.....	.....	188.3	18.7	152.3
Wayne . . . . .	5	.....	.....	2.0	2.6	82.6	.....	87.2
State . . . . .	1,053	1.5	0.9	1.8	3.9	130.8	6.4	145.1

TABLE 26  
Number of Coal Mines Located on Each of the Following Railroads—By Counties.  
(Two mines for which no data were reported are not included in this table)

County.	Total Number Mines Reporting.	B.	C. A.	C. & M.	C.	D. T. & I.	Erie	H.	M.	K. & M.	N. Y. C.	N. & W. W.	O. R. W.	P. C. St. L.	P. L. W.	P. & O. C.	W. L. E.	Y. C. R.	Z. & W.	Trac- tion.	Wag- on	
Athens .....	101	6								66	3				1	17				21	14	1
Benton .....	131	65													7	7	4			6	24	5
Carroll .....	20	8							2	3					6	8				7	2	21
Columbiana .....	46														18	8	3			10		9
Coaition .....	47									7												38
Gallia .....	16																					11
Guernsey .....	45	16																				18
Harrison .....	44	1									65	2										4
Hecking .....	59																					6
Holmes .....	9															1						24
Jackson .....	61	13								13	1											10
Jefferson .....	81								4	4												18
Lawrence .....	22	4														16	1					3
Mahoning .....	19									1												5
Medina .....	3																					1
Meigs .....	36										11	10										1
Monroe .....	1																					20
Morgan .....	2																					1
Muskingum .....	46	8														8	6			2	2	33
Noble .....	15																					11
Perry .....	94	19	1								5					11						4
Portage .....	4											3										47
Scioto .....	2	1														1						1
Stark .....	70	5																				54
Summit .....	5																					4
Trumbull .....	1																					1
Tuscarawas .....	112	26								2	7											11
Vinton .....	11	3										8										47
Washington .....	4																					1
Wayne .....	6																					1
State .....	1,102	165	1	2	13	17	4	168	22	22	4	4	113	15	4	14	87	74	7	42	6	383

## FIRE CLAY MINES.

### PRODUCTION.

Fire clay production in Ohio in 1921 totaled 1,625,096 tons and it will be noted that this was 19.9 per cent less than for the year 1920. The following table shows the production from 1916 to 1921 inclusive by counties, with comparative data for the years 1920 and 1921.

County.	Tons Produced.					Gain.			Loss.		
	1916	1917	1918	1919	1920	1921			Tons	Per Cent.	
Athens .....	98,734	103,099	62,395	89,848	94,672	56,365	.....	.....	37,807	39.9	
Belmont .....	15,500	14,000	12,000	16,000	.....	193,917	.....	.....	9,871	4.8	
Carroll .....	251,884	208,788	138,456	181,319	208,788	103,788	.....	.....	122,857	54.2	
Columbiana .....	272,232	299,928	239,563	162,803	226,645	88,280	.....	.....	100.0	100.0	
Cuyahoga .....	.....	.....	.....	.....	.....	5,400	5,400	.....	.....	.....	
Delaware .....	.....	.....	.....	.....	.....	4,027	4,027	.....	11,936	74.7	
Gurnsey .....	16,052	17,865	13,527	16,547	15,963	3,750	3,750	100.0	100.0	14,547	
Hamilton .....	122,696	128,661	125,745	106,542	99,632	85,085	.....	.....	.....	14.6	
Hocking .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Holmes .....	22,601	29,162	17,909	19,171	25,504	9,888	.....	.....	15,616	61.2	
Jackson .....	410,460	333,269	221,880	285,984	215,863	243,846	27,983	12.9	.....	.....	
Jefferson .....	54,813	56,648	73,175	83,300	99,573	44,753	.....	.....	54,820	55.0	
Lawrence .....	43,426	41,387	47,335	26,883	4,229	10,619	6,390	15.1	.....	.....	
Mahoning .....	18,732	6,206	9,744	6,383	24,381	12,328	.....	.....	12,053	49.4	
Muskingum .....	88,955	99,976	66,224	76,457	88,755	76,101	.....	.....	12,654	14.2	
Perry .....	138,472	157,125	134,241	104,942	140,574	64,796	.....	.....	75,778	53.9	
Scioto .....	177,713	258,615	94,565	129,738	134,913	116,617	.....	.....	18,296	13.5	
Stark .....	95,568	94,989	77,979	71,752	59,873	96,980	37,607	163.3	.....	.....	
Summit .....	501,044	538,716	379,225	404,740	466,675	408,056	.....	.....	58,619	12.5	
Tuscarawas .....	24,633	24,946	1,359	18,061	.....	.....	.....	.....	8,653	100.0	
Vinton .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wayne .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
State Loss, Tons .....	2,553,465	2,413,380	1,713,320	1,811,940	1,909,193	1,625,096	.....	.....	284,097	14.9	
Net Loss, Per Cent .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

## CHARACTER OF OPENING.

Ninety-eight mines reported the character of the opening as shown below:

<i>Kind of Opening</i>	<i>Number of Mines</i>
Drift .....	47
Slope .....	25
Shaft .....	12
Drift and slope.....	3
Drift and shaft.....	1
Stripping .....	4
Surface .....	1
Pit .....	5
Total number reporting.....	98(a)

(a) Does not include one mine for which no data was given.

## VENTILATION.

The same number of mines reported the mode of ventilation as:

<i>Mode of Ventilation</i>	<i>Number of Mines</i>
Fan .....	50
Furnace .....	9
Natural .....	31
Fan and natural.....	4
Total number reporting.....	98

## NUMBER OF EMPLOYEES.

The table following shows the number of employes on the payrolls nearest the fifteenth of each month and would indicate that the lowest point in employment was reached in February, 1921, for this particular industry.

Month.	Number of Employees on the 15th of Each Month.	
	1920 (97 Mines) b	1921 (98 Mines) a
January .....	1,227	894
February .....	1,180	842
March .....	1,240	926
April .....	1,255	970
May .....	1,148	1,062
June .....	1,095	1,090
July .....	1,017	985
August .....	976	1,030
September .....	951	1,065
October .....	993	1,001
November .....	948	1,024
December .....	996	1,057

a Does not include one mine for which no data was given.

b Does not include one mine for which no data was given and two mines in which owners did their own work.

## DAYS IN OPERATION.

Ninety-eight mines report the number of days in operation which is given in the following table, with a comparison of the year 1920.

Number of Days in Operation.	1920 (98 mines) <i>b</i>	1921 (98 mines) <i>a</i>
Less than 100.....	8	17
100 but under 150.....	8	16
150 but under 200.....	11	21
200 but under 250.....	25	20
250 but under 300.....	38	20
300 but under 314.....	7	4
314 and over.....	1	.....

*a* Does not include one mine for which no data was given.

*b* Does not include one mine for which no data was given, and two mines in which owners did their own work.

## HOURS OF LABOR PER WEEK.

The data following compiled from the reports indicate that 60 per cent of the mines worked 60 hours per week when in operation.

Hours of Labor Per Week.	Number of Mines Reporting.
Less than 44.....	2
44.....	7
Over 44 but under 48.....	.....
48.....	60
Over 48 but under 54.....	1
54.....	20
Over 54 but under 56.....	.....
56.....	1
Over 56 but under 60.....	2
60.....	5
	98 <i>a</i>

*a* Does not include one mine for which no data was given.

## WAGE AND SALARY PAYMENTS.

Wages and salaries paid to employees in the fire clay industry, segregated as to each class of work are given in the following table, showing that during the year 1921, \$1,235,790 was paid out for this work.

County.	Total Number Mines Reporting.	To Wage Earners.	To Office Help.	To Superintendents and Managers.	Total.
Athens .....	2	\$40,258	\$800	\$1,800	\$42,858
Carroll .....	7	132,645	632	4,684	137,911
Columbiana .....	10	69,094	2,400	4,000	75,494
Cuyahoga .....	1	42,465	.....	.....	42,465
Delaware .....	1	2,922	.....	.....	2,922
Guernsey .....	1	1,836	.....	1,050	2,886
Hamilton .....	1	3,752	.....	.....	3,752
Hocking .....	3	60,334	.....	3,345	63,679
Jackson .....	2	7,257	.....	.....	7,257
Jefferson .....	13	174,217	1,950	17,302	193,469
Lawrence .....	4	43,854	7,055	5,400	56,309
Mahoning .....	2	18,454	1,500	2,113	22,067
Muskingum .....	5	10,924	.....	.....	10,924
Perry .....	9	54,404	150	765	55,319
Scioto .....	7	72,366	2,800	5,342	80,508
Stark .....	8	92,990	.....	3,145	96,135
Summit .....	4	36,479	300	.....	36,779
Tuscarawas .....	18	293,576	300	11,180	305,056
State .....	98	\$1,157,827	\$17,887	\$60,076	\$1,235,790

CLASSIFIED WEEKLY WAGE RATES.

Payrolls of ninety-eight fire clay mines for the week of greatest employment show a total of 1,472 employees of all classes and the following table gives the number in each range of wage rates listed as to occupation.

CLASSIFIED WEEKLY WAGES OF EMPLOYEES IN FIRE CLAY MINES IN OHIO FOR THE WEEK OF GREATEST EMPLOYMENT DURING THE YEAR ENDING DECEMBER 31, 1921.

Occupation.	\$6 Under \$6	\$6 but under \$7	\$7 but under \$8	\$8 but under \$9	\$9 but under \$10	\$10 but under \$11	\$12 but under \$12	\$12 but under \$15	\$15 but under \$18	\$15 but under \$21	\$18 but under \$21	\$18 but under \$25	\$21 but under \$30	\$25 but under \$35	\$30 but under \$35	\$35 but under \$30	\$40 or over	Total.	
<b>Wage Earners—</b>																			
Inside Employees.....	4	1	1	1	2	6	42	41	84	165	259	223	243	40	1,061	398			
Outside Employees.....	1	1	1	1	2	6	82	43	106	106	52	50	50	50	50	50	5		
Office Help—																			
Males .....																			
Females .....																			
Total .....	4	2	1	1	2	9	48	124	79	272	315	274	295	46	1,472				

## GYPSUM.

## PRODUCTION.

The reports for the year 1921 show that gypsum was produced in only three mines in the State of Ohio and these are in Ottawa County. The following figures indicate a very substantial increase over the year 1918.

Year.	Tons Pro- duced.
1916 .....	279,742
1917 .....	270,552
1918 .....	199,456
1919 .....	251,314
1920 .....	281,118
1921 .....	268,905

## NUMBER OF EMPLOYEES.

Following is given the number of employees on the payroll on the fifteenth of each month and would indicate that September was the month of maximum employment in this industry.

Month.	Number of Em- ployees on the 15th of Each Month. (3 Mines.)
January .....	213
February .....	230
March .....	232
April .....	268
May .....	244
June .....	262
July .....	265
August .....	282
September .....	310
October .....	307
November .....	256
December .....	239

## DAYS IN OPERATION.

The next tabulation shows the number of days the industry operated during the year 1921.

Number of Days in Operation.	Number of Establishments reporting.
Less than 100.....	
100 but under 150.....	
150 but under 200.....	
200 but under 250.....	
250 but under 300.....	
300 but under 314.....	3
314 or over.....	
	3

## HOURS OF LABOR PER WEEK.

The reports show that the gypsum mines worked sixty hours per week when in operation during the last year.

## WAGE AND SALARY PAYMENTS.

\$352,963 was paid out in wages to adult wage earners during the year 1921.

## WEEKLY WAGES AND SALARIES.

The following table indicates that 339 workers were engaged in the industry and segregated as to occupation gives the number within certain wage ranges.

Occupation.	Number receiving each classified weekly wage.						
	\$18 but under \$21	\$21 but under \$25	\$25 but under \$30	\$30 but under \$35	\$35 but under \$50	\$50 or over	Total.
Wage Earners—							
Inside .....	10	84	141	42	18	1	296
Outside .....	3	6	8	14	9	.....	40
Office Help—							
Males .....	1	.....	.....	2	.....	.....	2
Females .....	.....	.....	.....	.....	.....	.....	1
State .....	14	90	149	58	27	1	339

## LIMESTONE.

## PRODUCTION.

The following table gives the production of limestone by counties in the State of Ohio for the years ending December 31, 1920 and 1921.

County.	Tons Produced	
	1920 <sup>a</sup>	1921
Adams .....	207,115	59,310
Allen .....	327,993	538,552
Belmont .....		3,750
Clark .....	64,311	25,973
Clinton .....	27,429	62,642
Crawford .....	46,237	56,404
Delaware .....	68,841	98,442
Erie .....	762,875	474,542
Franklin .....	1,435,237	914,813
Greene .....	17,600	697
Hancock .....	164,013	222,595
Hardin .....	424,900	542,840
Highland .....	15,000	20,850
Jackson .....		4,081
Jefferson .....		4,000
Lawrence .....	175,607	297,575
Logan .....	10,000	28,000
Lucas .....	467,271	527,613
Mahoning .....	138,962	32,433
Marion .....	187,324	241,090
Mercer .....	14,560	28,500
Miami .....	393,987	196,748
Montgomery .....	111,084	19,773
Muskingum .....		309,060
Ottawa .....	2,022,165	1,097,541
Paulding .....	8,125	11,375
Preble .....	297,400	201,650
Putnam .....	37,744	82,030
Ross .....	44,440	46,338
Sandusky .....	947,991	718,303
Seneca .....	719,475	346,758
Stark .....	108,758	181,284
Trumbull .....	1,000	.....
Tuscarawas .....	518	.....
Union .....	2,674	.....
Van Wert .....	150,689	238,678
Wood .....	190,917	225,742
Wyandot .....	248,984	206,898
State .....	9,837,206	8,006,880

<sup>a</sup> Previous to the year 1920 limestone production was not tabulated by counties.

## DISPOSITION OF PRODUCT.

The following table shows a comparison of the years 1916 to 1921 inclusive in the disposition of product and reflects in the third and fourth items that road building activity has increased extensively, while the tenth item would indicate that there is again a large quantity of pulverized limestone being used to sweeten the soil.

Disposition of Product.	Tons Produced.					
	1916 (116 Quar.)	1917 (113 Quar.)	1918 (108 Quar.)	1919 (99 Quar.)	1920 (108 Quar.)	1921 (113 Quar.)
Burned into lime.....	606,745	818,086	674,968	790,328	766,602	734,026
Fluxing purposes .....	4,757,798	5,124,579	5,718,982	8,881,272	4,864,058	1,424,776
Cement .....	281,445	202,852	219,584	380,635	300,158	468,228
Macadamizing or ballast.....	5,610,798	3,236,386	2,983,648	2,727,497	2,707,528	4,267,627
Piers and protection purposes .....	76,486	81,195	16,774	1,202	11,161	16,855
Block or dimension stone.....	68	181		275		
Ordinary building stone.....	42,870	82,481	6,226	8,894	20,424	6,701
Concrete purposes .....				486,588	1,197,924	611,849
Paving stone .....	880,644	49,284	48,648	180,508	40,592	21,106
Agricultural purposes .....				78,666	34,048	49,415
Flagging .....						290
Curbstone .....	1,600	8,770			9,800	
Miscellaneous purposes .....	542,808	1,072,948	1,106,496	206,001	455,226	412,080
State .....	12,250,652	10,671,697	10,765,201	8,691,885	9,837,906	8,006,880
Total Tons of Lime Produced .....			82,700	382,619	392,688	371,658

## NUMBER OF EMPLOYEES.

The next table shows the number of employes on the payroll nearest the fifteenth of each month for the year 1921 with comparative data for the year 1920, and would show that employment during the two years was lowest during the month of December, 1921.

Month.	Number of Employes on the Payroll Nearest the 15th of Each Month.	
	1920 (108 quarries.)	1921 (113 quarries)
January .....	2,748	2,726
February .....	2,682	2,765
March .....	3,029	2,883
April .....	3,291	2,955
May .....	3,515	3,169
June .....	3,765	3,505
July .....	3,878	3,319
August .....	3,855	3,316
September .....	3,909	3,514
October .....	3,812	3,331
November .....	3,503	2,999
December .....	3,023	2,560

## DAYS IN OPERATION.

The following shows that a majority of the quarries operated less than two hundred days during the year.

<i>Days in Operation</i>	<i>Number of Quarries Reporting</i>
Less than 100.....	15
100 but under 150.....	30
150 but under 200.....	26
200 but under 250.....	13
250 but under 300.....	19
300 but under 314.....	9
314 or over.....	1
 Total .....	 113

## HOURS OF LABOR PER WEEK.

The next table indicates the hours of employment per week when in operation.

<i>Normal Hours of Labor Per Week</i>	<i>Number of Quarries Reporting</i>
Under 48 .....	2
48 .....	6
Over 48 but under 54.....	7
54 .....	13
Over 54 but under 56.....	8
56 .....	..
Over 56 but under 60.....	8
60 .....	67
Over 60 but under 72.....	1
72 .....	..
Over 72 .....	1
 Total .....	 113

## WAGE AND SALARY PAYMENTS.

The reports show that a total of \$3,844,866 was paid to workers in the limestone industry during the year.

## CLASSIFIED WEEKLY WAGE RATES.

The following indicates that there were 4,421 workers engaged in the industry during the week of greatest employment and arranged as to occupation gives the number within certain wage and salary ranges:

CLASSIFIED WEEKLY WAGES OF EMPLOYES IN LIMESTONE QUARRIES FOR THE WEEK OF GREATEST EMPLOYMENT DURING THE YEAR ENDING DECEMBER 31, 1921.

Occupation.	Number of employees receiving each classified weekly wage.										Total.				
	\$6 Under \$6	\$6 but under \$7	\$7 but under \$8	\$8 but under \$9	\$9 but under \$10	\$10 but under \$10	\$12 but under \$12	\$15 but under \$15	\$18 but under \$18	\$21 but under \$21	\$25 but under \$25	\$30 but under \$30	\$35 but under \$35		
Wage Earners .....	27	7	15	16	7	28	69	222	742	1,064	1,207	523	295	47	4,269
Office Help —															
Male .....															
Female .....															
State .....	27	7	17	16	7	31	76	234	761	1,082	1,236	546	314	67	4,421

## SANDSTONE.

### PRODUCTION AND DISPOSITION.

The following table gives the production of sandstone in the State of Ohio for the past six years and the purpose for which used. It will be noted that production for the past year did not keep up with the average since 1916.

Purpose for Which Used.	Unit of Measure.	Quantity Produced.					
		1916 (45 Quar.)	1917 (48 Quar.)	1918 (49 Quar.)	1919 (44 Quar.)	1920 (46 Quar.)	1921 (42 Quar.)
Rough Building Stone	Cubic Feet	679,920	623,515	130,142	1,357,263	332,764	581,732
Building Stone	Cubic Feet	696,183	783,042	245,759	390,155	400,929	423,412
Burial Vaults	Cubic Feet	14,695	115,941	204,482	154,056	84,759	84,759
Curbing	Cubic Feet	1,243,494	884,907	281,177	754,663	317,526	695,281
Flagging	Cubic Feet	1,019,492	849,317	719,806	860,406	618,685	685,867
Roofing and Concreting	Tons (2000 lbs.)	.....	.....	23,827	11,223	37,451	.....
Pulp Stones	Tons (2000 lbs.)	44,547	48,071	17,710	2,941	7,026	3,417
Grindstones	Tons (2000 lbs.)	456,420	670,912	54,270	37,717	37,494	13,289
Silica Sand	Tons (2000 lbs.)	3,103	1,819	525,292	344,154	532,017	189,864
Whetstones, Oilstones, Etc.	Gross Pounds	.....	.....	981	.....	.....	.....
Ruble Stones	Tons (2000 lbs.)	.....	.....	.....	1,308	.....	.....
Lathe Stones	Pieces	.....	.....	.....	8,286	26,245	6,732
Scythe Stones	Pieces	.....	.....	.....	16,494	21,151	197,712
Miscellaneous Purposes (including stone for breakwaters and lake filling, furnace lining, etc.)	Tons (2000 lbs.)	335,179	126,488	108,548	75,069	73,983	77,748

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